



## **Global Warming Pollution Reductions under the Lieberman-Warner Bill**

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The Lieberman-Warner bill will cover all sources that emit more than 10,000 tons of carbon dioxide equivalent per year in the electric power and industrial sectors as well as all transportation fuel providers whose products will produce more than 10,000 tons per year when consumed. Based on an analysis by EPA, emissions from covered sources in 2005 were approximately 5200 million metric tons CO<sub>2</sub> equivalent (MMTCO<sub>2</sub>e). The bill caps emissions from covered sources at 5200 MMTCO<sub>2</sub>e and reduces emissions annually, resulting in a 15% reduction in emissions from covered sources by 2020 and a 70% reduction by 2050.

The impact of the bill on total greenhouse gas emissions depends on assumptions made about state action, emissions from non-covered sources, and changes in biological carbon sequestration. The bill includes incentives for states to adopt climate policies that are more stringent than the federal program and to adopt and enforce model building codes; decouple electric and gas utility revenue from sales; and make energy efficiency investments as profitable as increasing energy supplies. The bill also includes energy efficiency standards for residential boilers and provisions requiring regular updates to residential and commercial building codes. Finally, the bill sets aside 5% of the total allowance pool to promote increased biological sequestration in domestic farms and forests and an additional 3% for similar international efforts.

These provisions will reduce emissions from non-covered sources below business as usual levels but the magnitude of these benefits is difficult to quantify. An Optimistic and Pessimistic case has been constructed to bound the likely range of total greenhouse gas emissions under the bill.

- The Optimistic case assumes that states that enact climate programs more stringent than the federal program retire the bonus allowances allocated to them (2% of the total allowance pool). While the bill makes clear that states have the authority to enforce global warming pollution standards more stringent than federal requirements currently there is no clear mechanism by which these state programs would result in reductions in national emissions other than by retiring their bonus allowances. Further elaboration of the state authority provisions could allow for greater national benefits from state programs. The Pessimistic case assumes that these states programs help achieve the emission caps specified in the bill but do not achieve additional environmental benefits.
- In the Optimistic case emissions from the residential and commercial sectors and methane emissions are assumed to decline at the same rate as emissions from covered sources. Emissions of nitrous oxide and other non-covered greenhouse gases are assumed to remain constant at 2005 levels. In addition, the 8% allowance set aside for biological sequestration is assumed to generate one ton of benefits for each ton of allowances devoted to this purpose.<sup>1</sup>

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<sup>1</sup> While some “anyway” tons are likely to be promoted through these programs the cost per ton to reduce emissions through biological sequestration is expected to be less than the market price for allowances within the cap. The

- In the Pessimistic case emissions from all non-covered sources are assumed to remain constant at 2005 levels and the 8% allowance set aside for biological sequestration is assumed to generate 0.5 tons of benefits for each ton of allowances devoted to this purpose.

The assumed breakdown of emissions between covered and non-covered sources is shown in Table 1. Table 2 presents the results of the analysis.

**Table 1. 2005 Emissions from Covered and Non-Covered Sources (MMTCO<sub>2</sub>e)<sup>2</sup>**

<b>Covered Sources</b>	<b>Residential and Commercial CO<sub>2</sub></b>	<b>Methane</b>	<b>Nitrous Oxide (less industrial)</b>	<b>Other</b>	<b>Total</b>
5200	585	539	447	489	7260

**Table 2. Emission Reductions under the Lieberman-Warner Bill**

<b>Year</b>	<b>Emissions of Covered Sources</b>	<b>Estimated Total Emissions Optimistic Case (MMTCO<sub>2</sub>e)</b>	<b>Estimated Total Emissions Pessimistic Case (MMTCO<sub>2</sub>e)</b>	<b>Reductions in Emissions from Covered Sources (2005 Baseline)</b>	<b>Estimated Range of Reductions in Total Greenhouse Gas Emissions (2005 Baseline)</b>
2012	5,200	6,844	7,052	0%	3-6%
2020	4,432	5,971	6,315	15%	13-19%
2030	3,472	4,881	5,393	33%	26-34%
2040	2,512	3,790	4,472	52%	38-48%
2050	1,560	2,708	3,558	70%	51-63%

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assumption here is that price differential between the incentives for biological sequestration and the price of allowances sold compensates for the anyway tons.

<sup>2</sup> U.S. EPA, 2007. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2005. EPA-430-R-07-002